

<b>DECLARATION UNDER RULE 132</b>	Application #	10/580,422
	Confirmation #	1713
	Filing Date	05/24/2006
	First Inventor	CAMINADE Anne-Marie
	Art Unit	1796
	Examiner	Dollinger, Michael M.
	Docket #	1004900-000276

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Anne-Marie CAMINADE, residing at 17 rue de l'Estérel, 31400 Toulouse, France, declare and say that:

1. I am a French citizen.

2. I graduated from University Paul Sabatier, Toulouse, France, obtained a Ph.D. in Chemistry, in 1984 from University Paul Sabatier, Toulouse, France. I am a research scientist from the French Research Institute (CNRS) and the author of more than 285 scientific papers and inventor of 14 patent families.

3. I am an inventor of the above-identified application, and I am aware that the claims of the present patent application have been rejected under 35 U.S.C. 102(b) as being unpatentable over US 6,939,831 (the '831 patent). I am also an inventor of the '831 patent.

4. The above-identified application is directed to a dendrimer comprising:

- (i) a central core,
- (ii) generation chain(s),
- (iii) an intermediate chain at the end of each generation chain, and
- (iv) a terminal group at the end of each generation chain, said group comprising a phosphonic moiety  $-P(=O)(OX)_2$  where X is  $-Me$ ,  $-H$ , or  $-M^+$ .

5. The Examiner has taken the position that '831 patent discloses a dendrimer comprising all the above features.

6. '831 concerns gellable dendrimers (see col. 13, l.61-65) and merely discloses dendrimers comprising an ammonium terminal group (see for instance formula (VIII)); such ammonium terminal groups are preferred (see col.13, l.13-27). '831 also speculatively mentions in passing in col.13, l.1-3, 9 that dendrimers may possibly include those with terminal functional groups "of the phosphonic type" or "phosphonium" groups.

7. This statement cannot encompass the dendrimers of the invention comprising a terminal group  $-P(=O)(OX)_2$  where X is  $-Me$ ,  $-H$ , or  $-M^+$  as recited by the present claims for the reasons below:

8. Before we made the instant invention, dendrimers comprising phosphonic type terminal groups were only disclosed in Prévoté et al, J. Org. Chem.1997, 62, 4834-4841, cited in the specification and enclosed. As apparent throughout the article, the disclosed dendrimers merely comprised a terminal group comprising the  $-P(=O)(OEt)_2$  moiety. Dendrimers comprising the  $-P(=O)(OX)_2$  moiety where X is  $-Me$ ,  $-H$ , or  $-M^+$  were unknown and had not been synthesized.

Dendrimers comprising the phosphonic ou phosphonate terminal group  $-P(=O)(OX)_2$  of the invention could not have been prepared from those corresponding dendrimers comprising the  $-P(=O)(OEt)_2$  moiety disclosed in Prévoté: That is because the ether bond O-Ethyl is rather stable and requires strong acidic conditions such as HCl. Therefore such hydrolysis substantially affects the dendrimer structure and leads to degradation products. By contrast, the O-Methyl bond as in the dendrimers of the invention is very sensitive and is easily cleaved with very mild reagents (such as  $Me_3SiBr$ ) without affecting the dendrimer structure, thus leading to the phosphonic or phosphonate terminal group according to the invention.

10. Consequently, in view of '831, the skilled reader would not have been able to prepare dendrimers comprising  $-P(=O)(OX)_2$  terminal groups where X is  $-Me$ ,  $-H$ , or  $-M^+$ .

As a result, the '831 teaching is insufficiently disclosed as far as dendrimers comprising a terminal group  $-P(=O)(OX)_2$  where X is  $-Me$ ,  $-H$ , or  $-M^+$  are concerned. The teaching of the '831 does therefore not encompass those terminal groups.

11. Further, the statement in '831 that dendrimers may include those comprising phosphonic or phosphonium groups would have immediately be interpreted by the skilled reader to merely referring to those dendrimers disclosed in Prévoté et al, that is those dendrimers comprising a  $-P(=O)(OEt)_2$  terminal group. The skilled person would not have

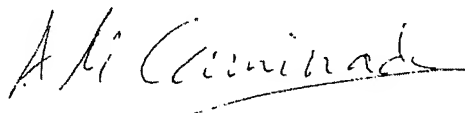
construed the '831 patent as encompassing dendrimers comprising  $-P(=O)(OX)_2$  terminal groups where X is  $-Me$ ,  $-H$ , or  $-M^+$ .

12. The present dendrimers of the invention comprising  $-P(=O)(OX)_2$  terminal groups where X is  $-Me$ ,  $-H$ , or  $-M^+$  are thus novel and inventive over the '831 patent.

13. The undersigned declares further that all statements made herein of her knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this

6<sup>th</sup>  
day of May 2009



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Anne-Marie CAMINADE